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New Thysanoptera from Florida.

By J. R. WATSON, Gainesville, Florida.

(Plate II)

The types of the new species here described are in the collection of the Florida Agricultural Experiment Station and cotypes will be placed in the U. S. National Museum.

Cryptothrips pini n. sp. (Pl. II, figs. 1-4).

General color very dark brown, almost jet black by reflected light.

♀. Total length 1.7 mm.; head .24 mm. long, .16 mm. in breadth; prothorax, length .14 mm., width .22 mm.; mesothorax, width .29 mm.; abdomen, width .31 mm.; tube, length .12 mm., width at base .069 mm.; antennae: 1, 24.3; 2, 46.6; 3, 61.4; 4, 56; 5, 47; 6, 40; 7, 41; 8, 30; total length 373 microns.

Head one and one-half times as long as broad; cheeks slightly rounded and bearing a few very weak and short spines. *Eyes* reddish brown, slightly bulging; posterior ocelli situated far forward near the anterior ends of the eyes with the inner margins of which they are contiguous. *Mouth cone* large and rounded at the apex, reaching nearly to the posterior margin of the prothorax. *Antennae* eight-segmented, one and one-half times as long as the head; segments 1 and 2 dark brown, nearly as dark as the head; 3 brownish yellow, 4 varying from yellowish brown to light brown, 5-8 light brown; hairs weak and inconspicuous, a pair of heavy cones on segments 4 and 5.

Prothorax little more than half as long as head, one and one-half times as wide as long, sides diverging posteriorly; a rather weak spine on each posterior angle; no other conspicuous spines. *Mesothorax* nearly rectangular in outline but the sides slightly converging posteriorly, anterior angles very sharp. *Metathorax* with nearly parallel sides.

Legs slender, concolorous with the body, except the tarsi which are lighter, bearing a number of short but rather stout spines. Each femur has one long spine on the anterior margin one-fourth of the distance from the proximal end; posterior tibia with one rather long spine and a stout tooth on the anterior distal end; on the middle tibia the spine is less conspicuous and on the fore tibia both spine and tooth are still less conspicuous.

Wings nearly reaching the end of the abdomen; anterior pair noticeably constricted below the middle, fringed with long hairs which are nearly together towards the end of the wing, otherwise very evenly spaced; from three to six (usually five) hairs of a double row present. Hind wings very similar and nearly as large, but no constriction or double row of hairs.

Abdomen rather long, tapering gradually from about the third somite; first three somites entirely free of spines; from the fourth on there is a short spine about two-thirds of the distance along the margin which becomes progressively longer on the posterior somites, which also bear two or three shorter spines. *Tube* rather long, sides converging to one-half the width of the base at the apex.

♂. Similar to the female except for the weaker and especially narrower abdomen. Total length 1.23 mm. Most of the measurements are from seven to fifteen per cent. less than those of the female except segments 3-8 of the antennae.

Larvae.—The very young larvae are straw yellow in color, except the last three or four somites of the abdomen which are reddish brown and the antennae which are dark brown. As the larva becomes older the entire abdomen becomes reddish brown and the thorax develops brown blotches. The eyes are dark red.

Described from numerous females and several males and larvae.

Habitat.—Among the needles of pine trees, where they are quite common. Found on both young trees and large ones which had just been felled. Gainesville, Florida, January to April, 1914.

***Heterothrips aesculi*, n. sp.** (Pl. II, figs. 5-6).

♀. Color very dark brown, black by reflected light. Total length, .9 to 1.0 mm.; head, .06 mm. long (exposed part), .15 mm. wide; pro-

thorax, .16 mm. long and .22 mm. wide; mesothorax, .26 mm. wide; abdomen, .14 mm. wide; antennae: 1, 23; 2, 38; 3, 72; 4, 41; 5, 30; 6, 28; 7, 15; 8, 17; 9, 19 microns.

Head as in *H. salicis* Shull, but the eyes are dark reddish brown, projecting prominently, spines between the facets very short. Ocelli yellow, posterior ones contiguous with the margins of the eyes, top-shaped with the pointed end directed posteriorly. Mouth cone as in *H. salicis*. Antennae, segments 1 and 2 considerably lighter than the body, apex of segment 2 nearly white, segment 3 yellow crossed by two white bands below the middle and with a white apex, segment 4 varying from nearly as yellow as 3 to nearly as brown as 5-9, always lighter at the apex than at the base, no circle of sensoria; segments 5-9 light brown; all segments, but especially 1 and 2, show transverse markings like the reticulations of the body; articulations between segments 3 and 4, 8 and 9, and sometimes 7 and 8 clear, others brown.

Prothorax as in *H. salicis* being about twice as long as head, sides strongly convex, beset with short spines which are more conspicuous at the angles. Mesothorax wider than metathorax.

Fore wings reaching to tip of abdomen, costal margin bearing about 30 spines, fore vein with about 26 and hind vein with about 18 spines.

Legs as in *H. arisaemae* Hood, femora concolorous with the body except the apical third of the fore pair which are concolorous with the fore tibiae, yellowish brown. Other tibiae brown but lighter on the apical third. Tarsi brownish yellow.

♂. .75 mm. long. Other measurements from 20 to 30 per cent. less than those of the female.

Described from numerous females and several males taken from the blossoms of *Aesculus pavia* at Gainesville, Florida, in March, 1914. This species is remarkably intermediate in many of its characters between *H. salicis* and *H. arisaemae*, particularly in the lengths of the antennal segments. It has the legs colored like the latter species, but on the whole is more closely related to *H. salicis*, from which it differs in the italicized characters.

***Euthrips tritici* var. *projectus* n. var.** (Pl. II, figs. 7-10).

♀. Size, 1.00 to 1.25 mm. Measurements of head and thorax as in *E. tritici*. Antennae: Segment 1, 27; 2, 39; 3, 53; 4, 45; 5, 32; 6, 43; 7, 8; 8, 10 microns.

Color varying from clear straw yellow without a trace of orange except at tip of abdomen (found in blossoms of yellow composites) to a deep orange on thorax and abdomen; never brownish yellow. Shape and spines of head and thorax as in *E. tritici*.

Antennae: Segment 1 concolorous with the head, with a long but

slender curved spine on inner anterior angle. Segment 2 light brown, very long and the dorsal portion prolonged forward over the third segment and bearing two stout spines as in var. *bispinosus* Morgan; in side view this segment is triangular in outline. Segment 3, basal two-thirds white or gray, distal third light brown, carrying four good-sized spines as do all the other segments except 7; 4, basal half yellow, distal brown, 5 yellow, 6-8 dark brown. *Eyes* dark red, with 30-40 large facets.

♂. Similar in size to *E. tritici*. More inclined to be orange in color than the female. Differing from the species chiefly in the characters of the antennae. Segment 1, 20; 2, 34; 3, 24; 4, 37; 5, 30; 6, 40; 7, 7; 8, 9 microns. The most decided difference between this variety and the species is again found in the second segment of the antennae, which in the male, however, is markedly shorter than in the species while in the female it is longer. The projection of the second over the third segment is even more pronounced than in the female.

This variety is more closely related to var. *bispinosus* Morgan than to the species, but differs in the forward projection of the second segment and in its relative length. The spines on this segment are also different. The spines on the ventral side at the apex are much shorter than figured by Morgan and there is a stout spine near the base that he does not figure at all.

This is a very common type in Florida, being found in a great variety of blossoms, as orange, tomato, roses, begonia, numerous composites, and among the needles of tall pine trees.

Described from numerous females and males.

Cryptothrips floridensis.

The author has received what appears to be this same species from Mr. A. Rutherford, government entomologist of Ceylon. This greatly extends the range of this species. See ENTOMOLOGICAL NEWS, April, 1913.

EXPLANATION OF PLATE-II.

- Figs. 1-4. *Cryptothrips pini* n. sp. 1. Head and prothorax of female. 2. Posterior portion of abdomen of female. 3. Dorsal view of right antenna of female. 4. Fore wing.
- Figs. 5-6. *Heterothrips acsculi* n. sp. 5. Head and thorax of female. 6. Tip of abdomen of female.
- Figs. 7-10. *Euthrips tritici* var. *projectus* n. var. 7. Head and thorax of female. 8. End of abdomen of female. 9. Dorsal view of left antenna of female. 10. Side view of second and third segments of left antenna of male.